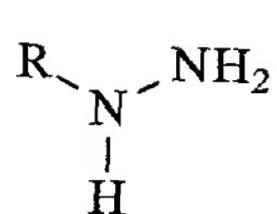
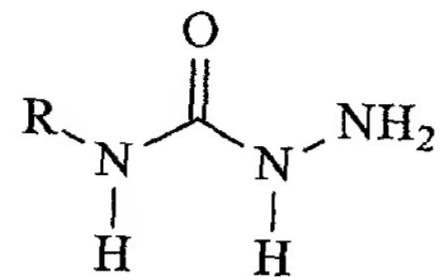


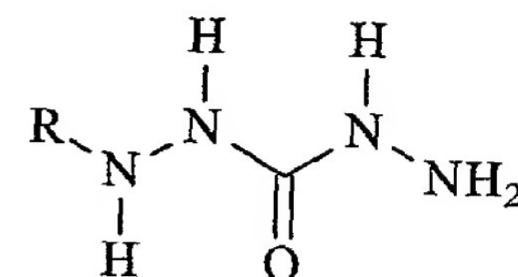
FIGURE 1



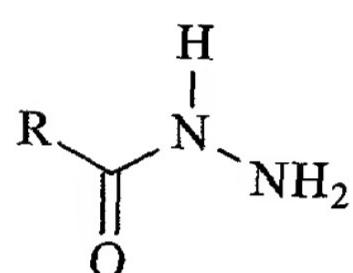
hydrazine



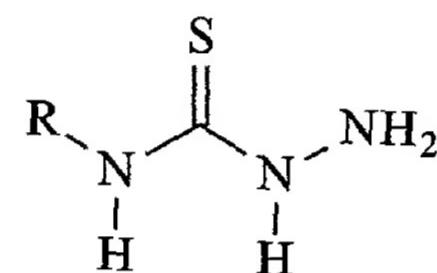
semicarbazide



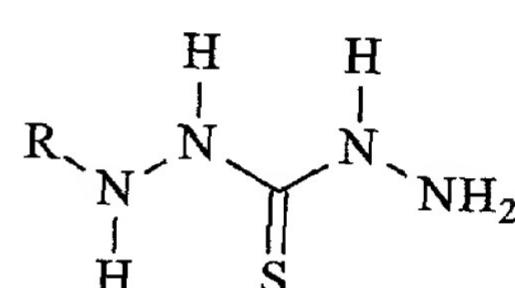
carbazide



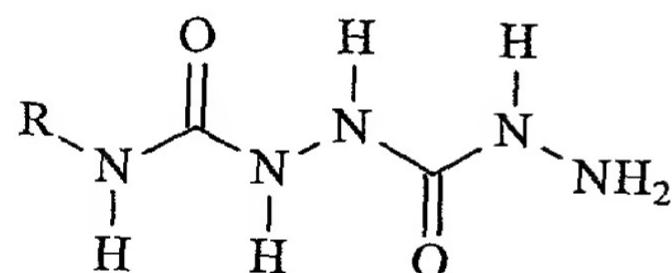
hydrazide



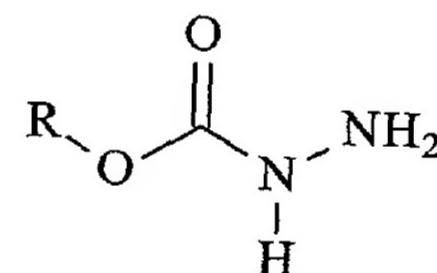
thiosemicarbazide



thiocarbazide



carbonic acid dihydrazine



hydrazine carboxylate

Title: HYDRAZINE-BASED AND C BASED BIFUNCTIONAL

CROSSLINKING REAGENTS

Applicant: David A. Schwartz

Serial No. To be assigned

Filed: March 22, 2001

Our Docket No.: 37154-753

FIGURE 2

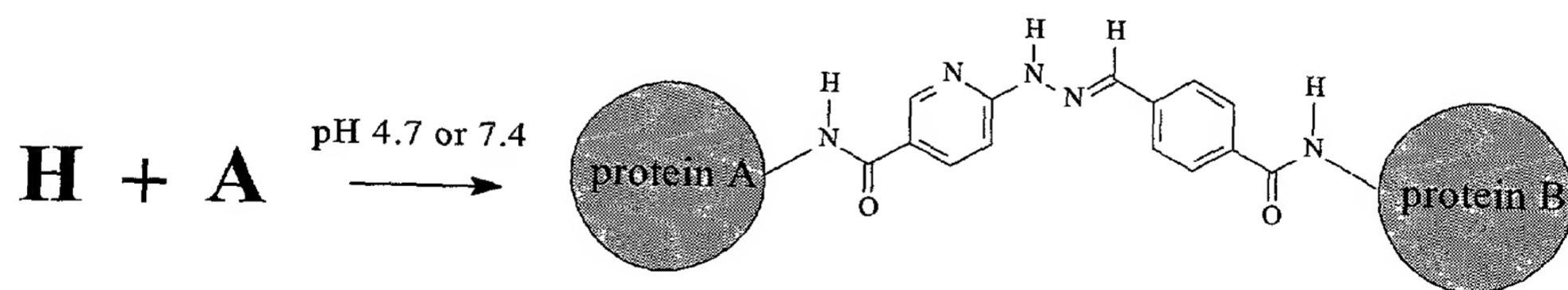
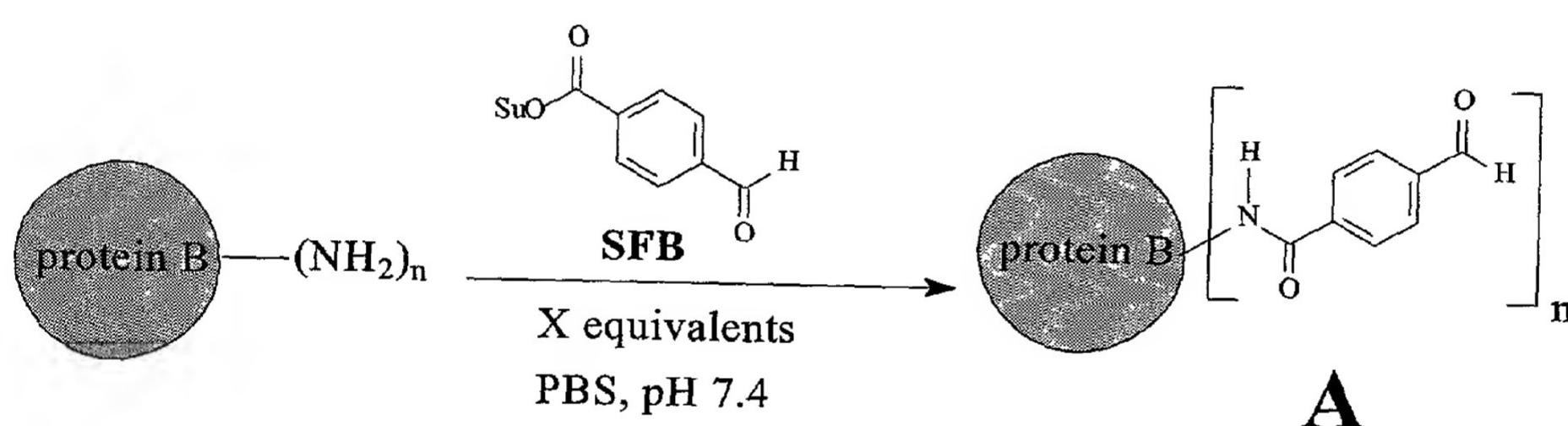
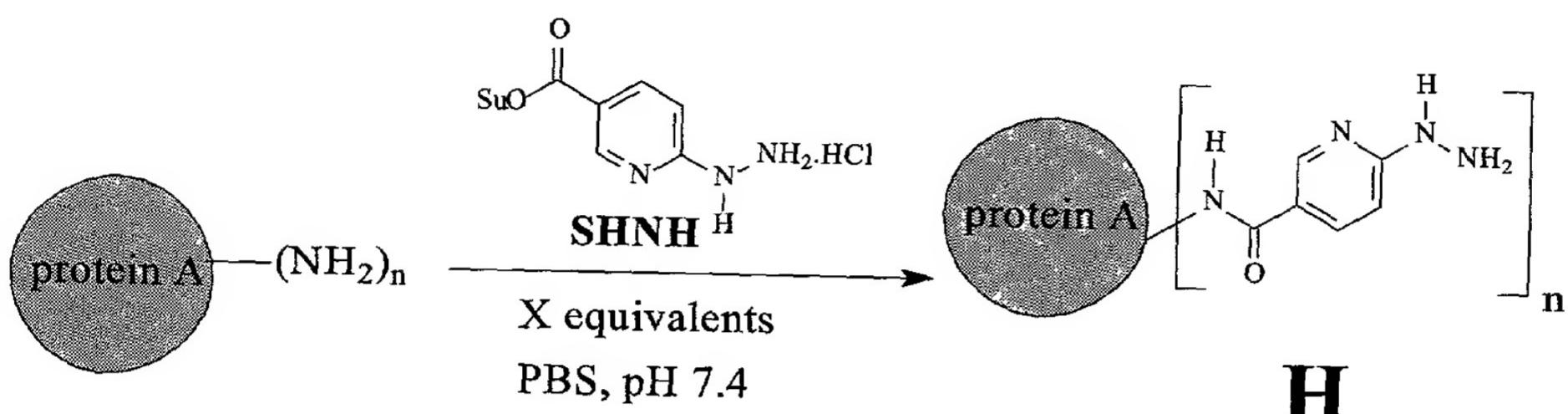


FIGURE 3

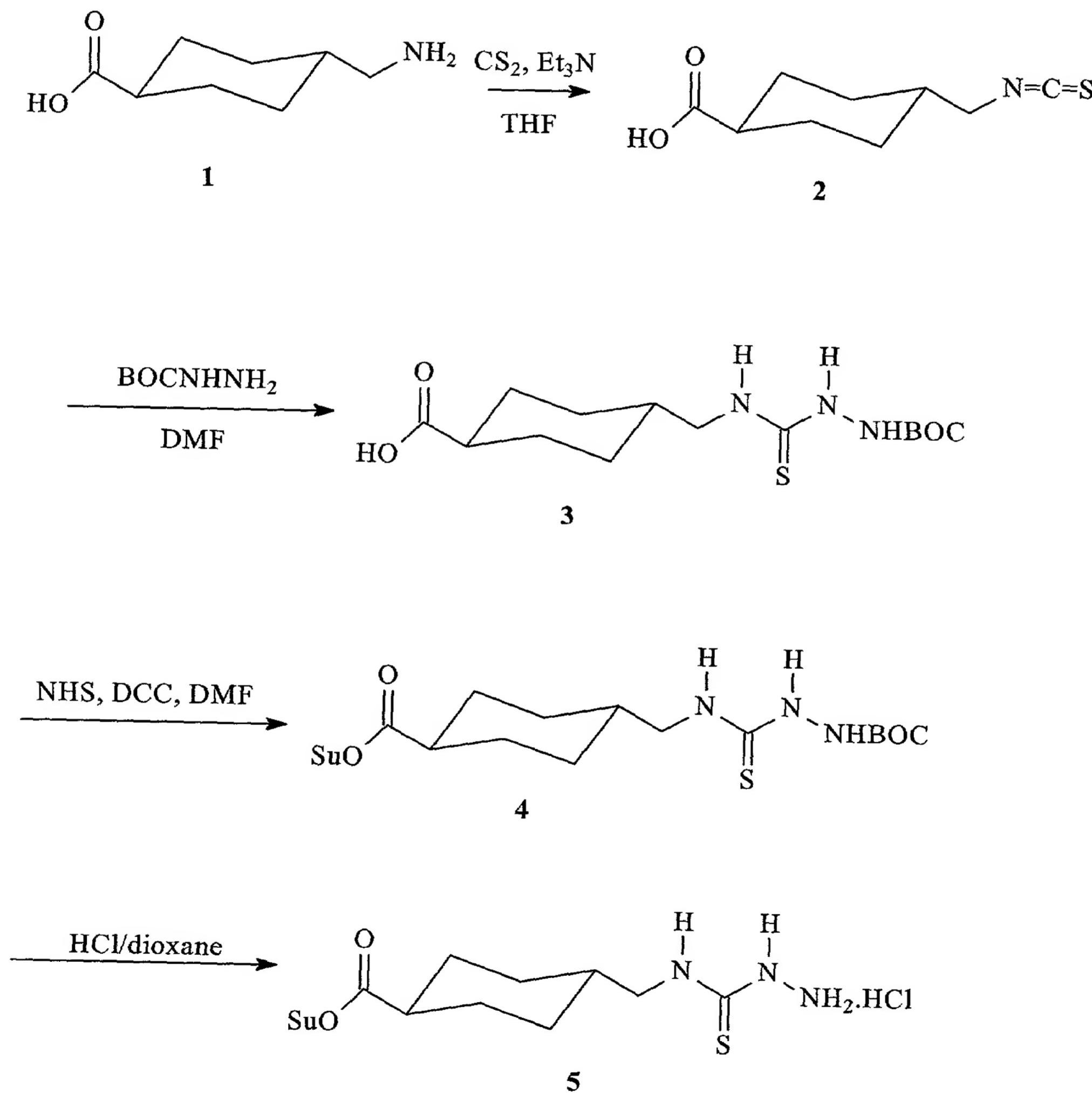
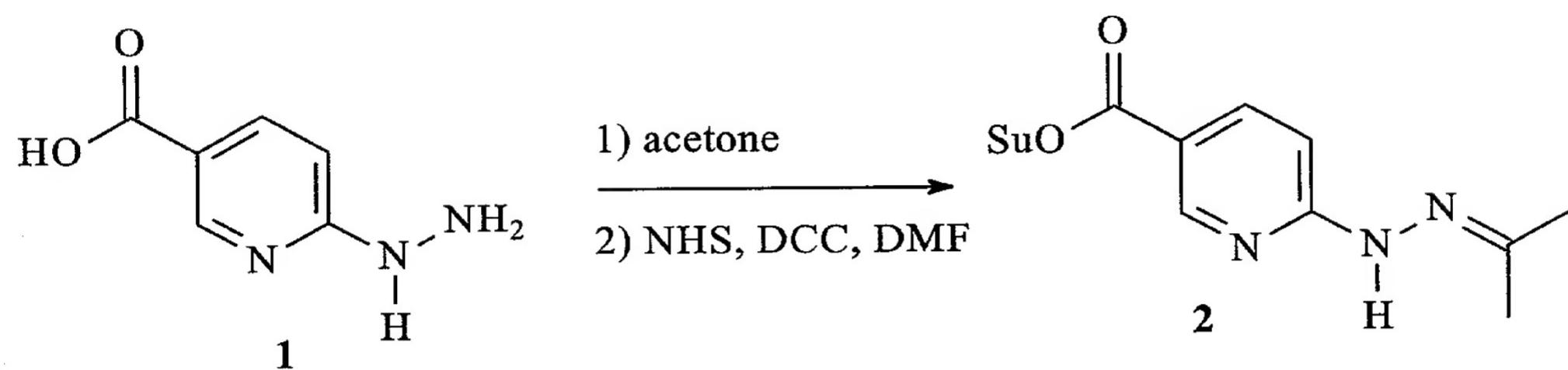


FIGURE 4



Title: HYDRAZINE-BASED AND C BASED BIFUNCTIONAL

CROSSLINKING REAGENTS

Applicant: David A. Schwartz

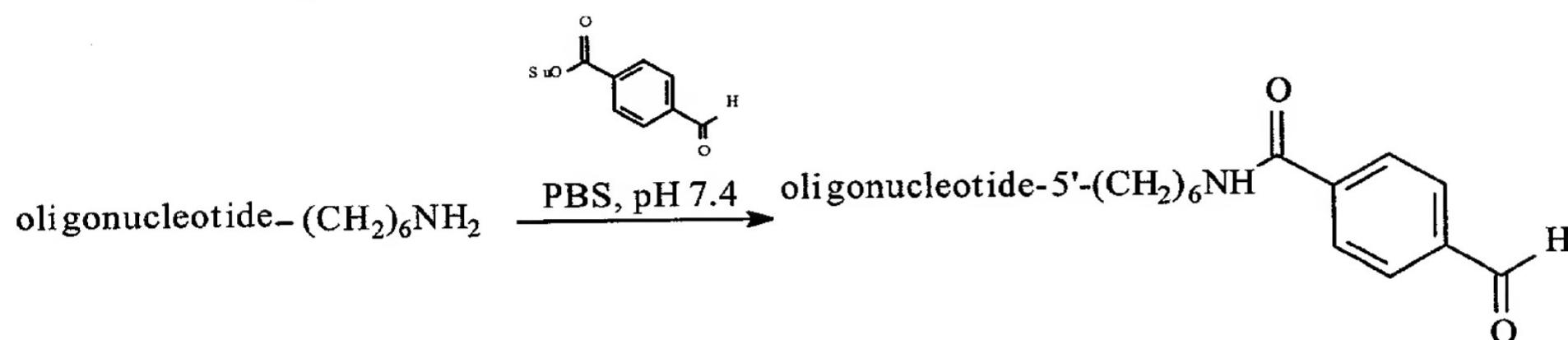
Serial No. To be assigned

Filed: March 22, 2001

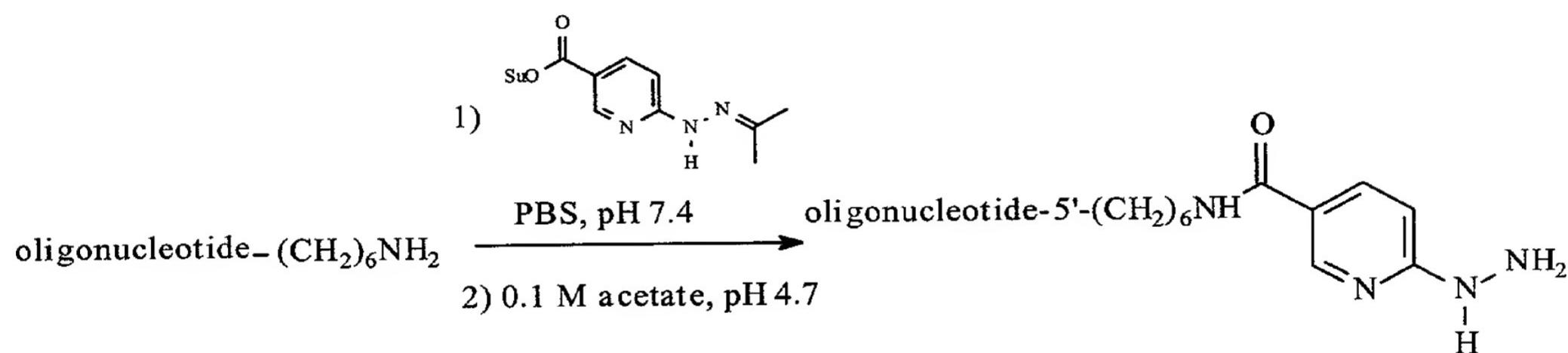
Our Docket No.: 37154-753

FIGURE 5

Preparation of 5'-aromatic aldehyde-modified oligonucleotide:



Preparation of 5'-heteroaromatic hydrazine-modified oligonucleotide:



Conjugation of hydrazino-modified oligonucleotide to aldehyde-modified oligonucleotide

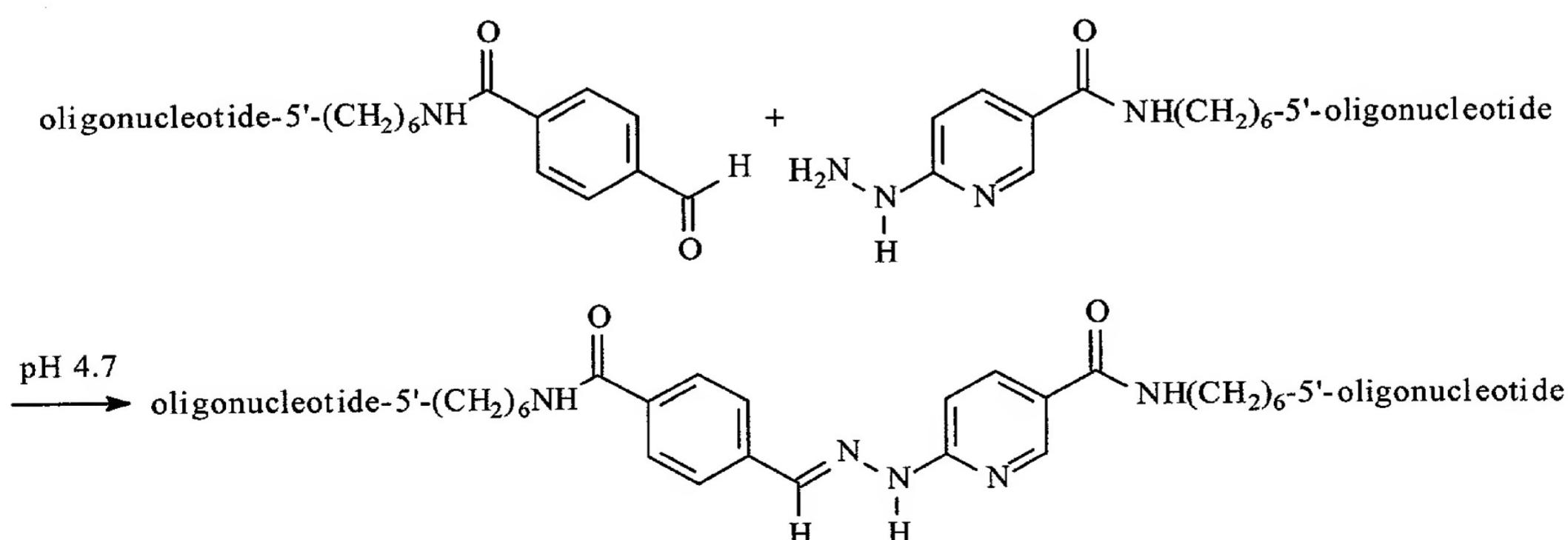


FIGURE 6

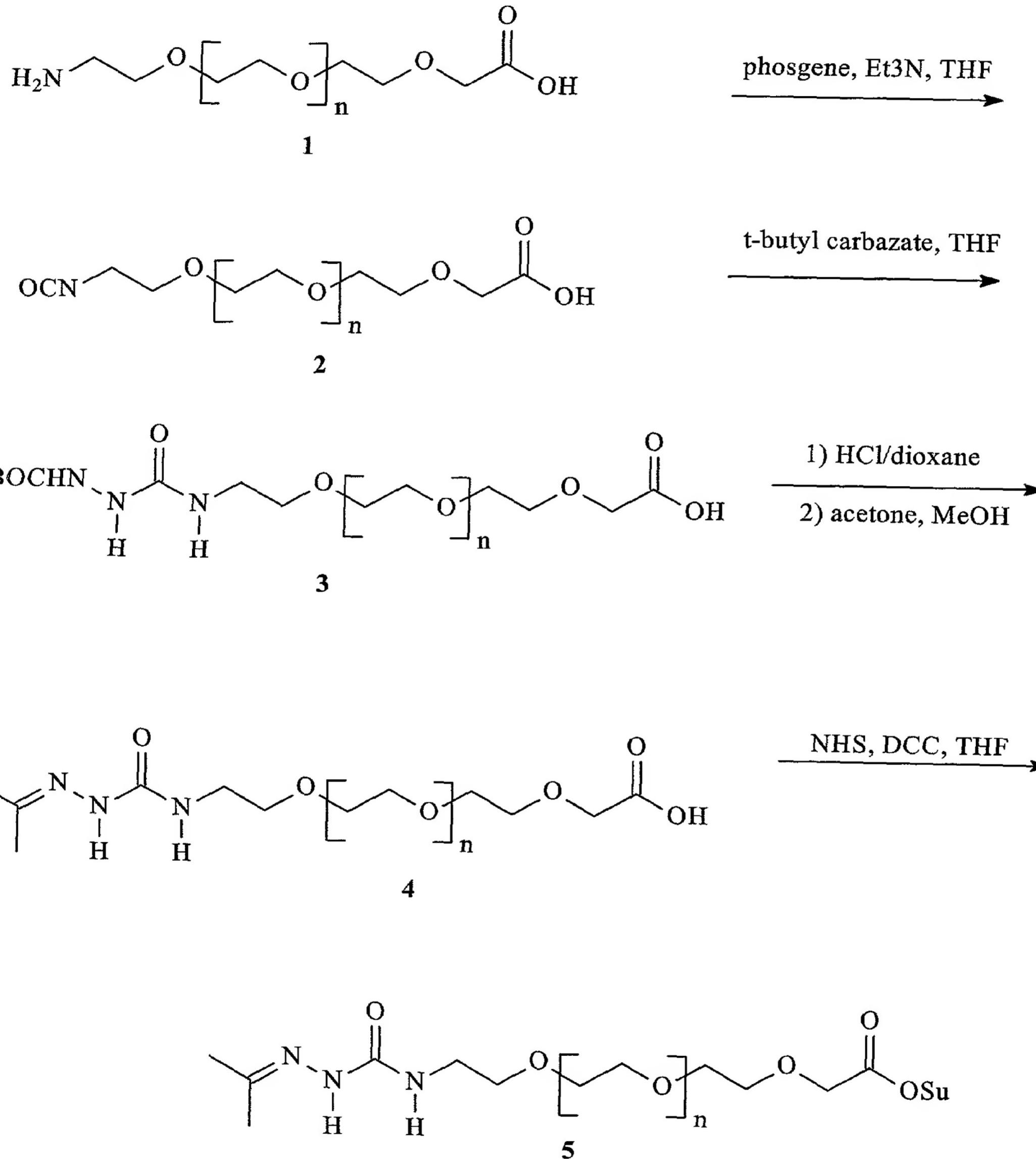


FIGURE 7

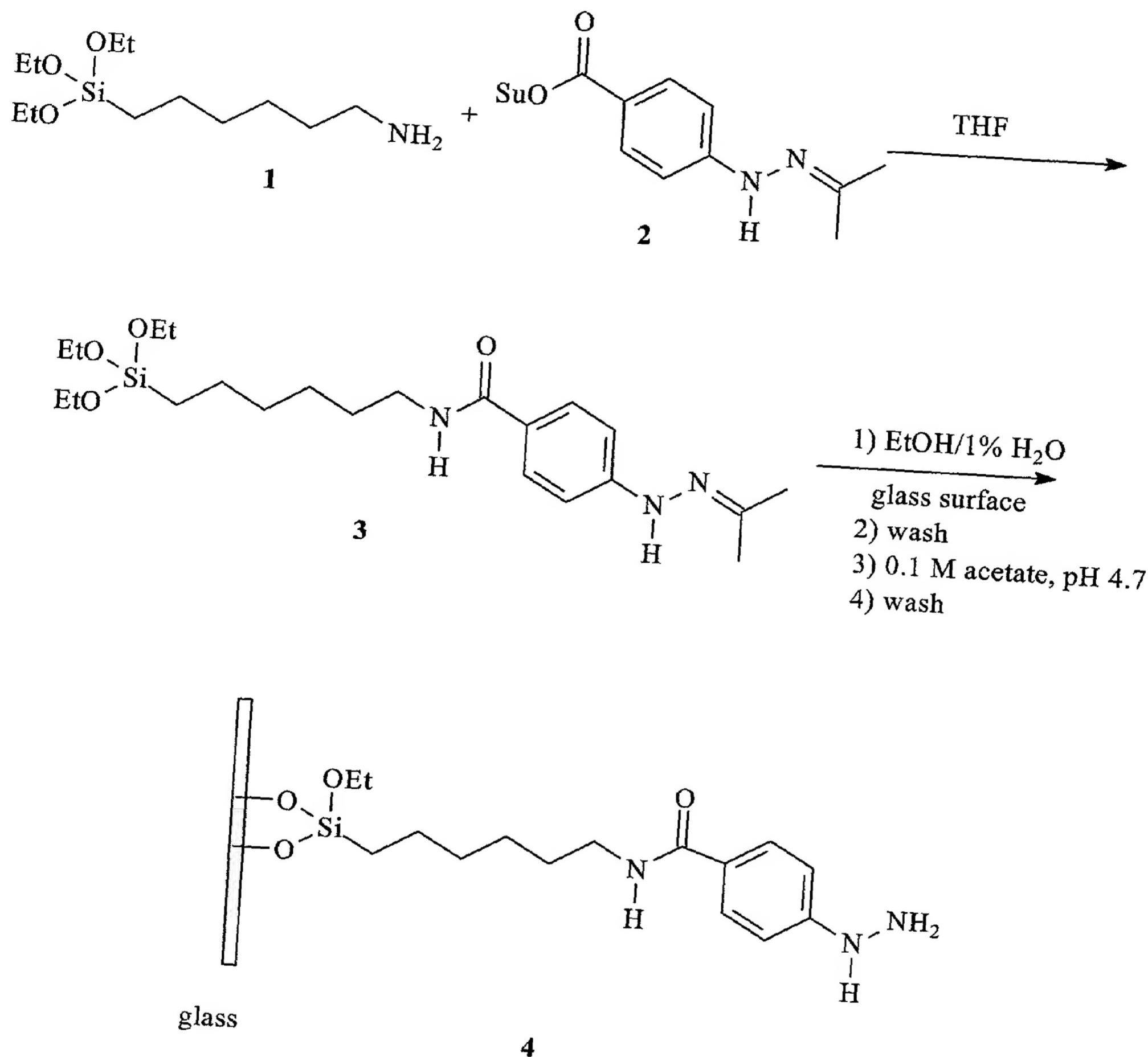


FIGURE 8

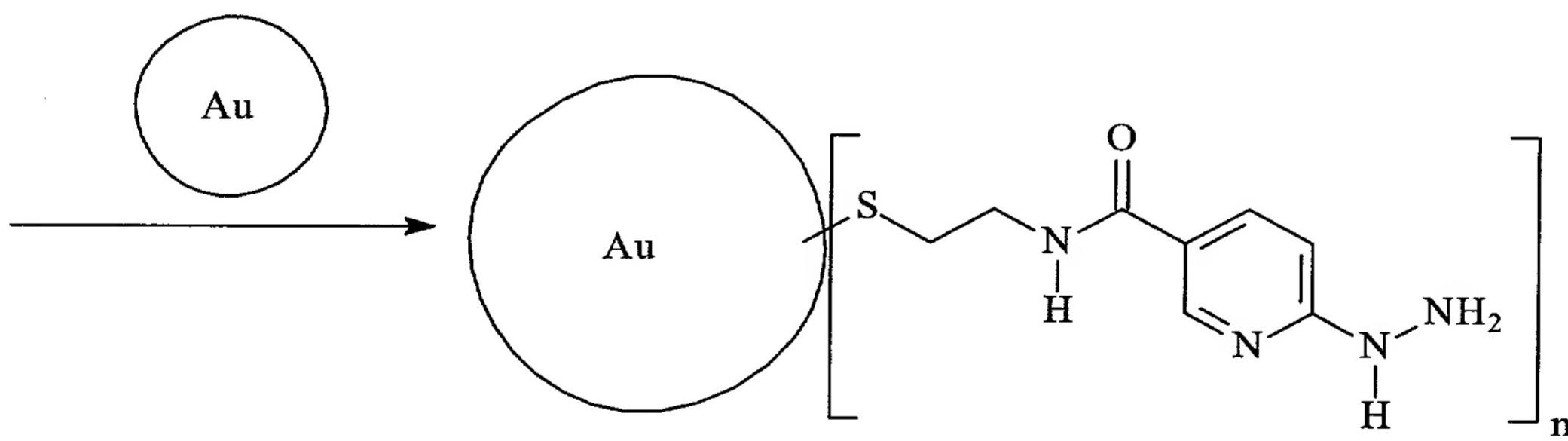
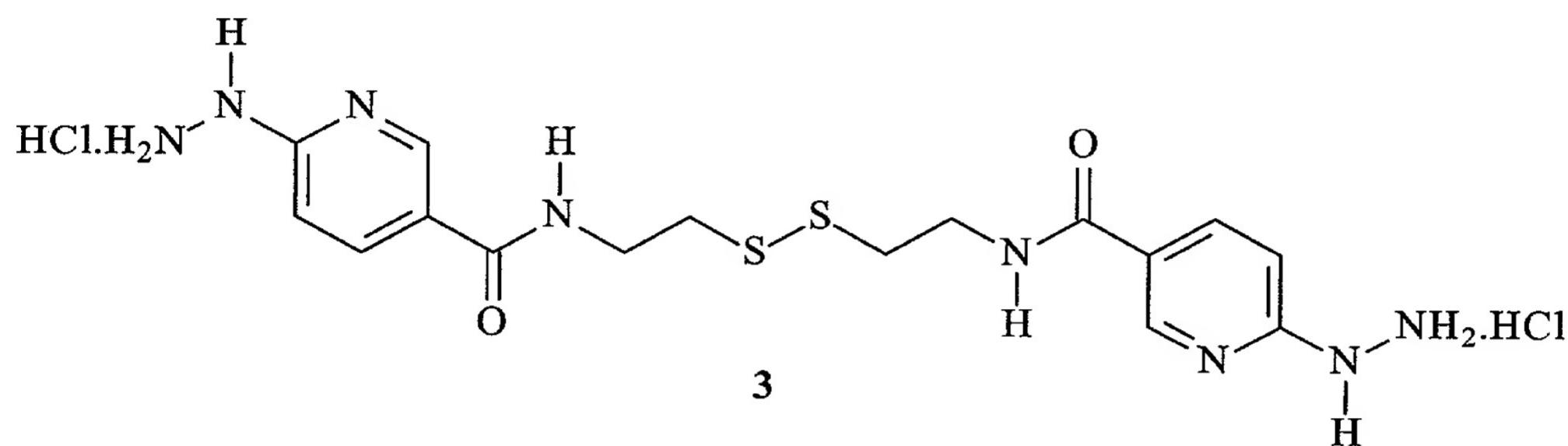
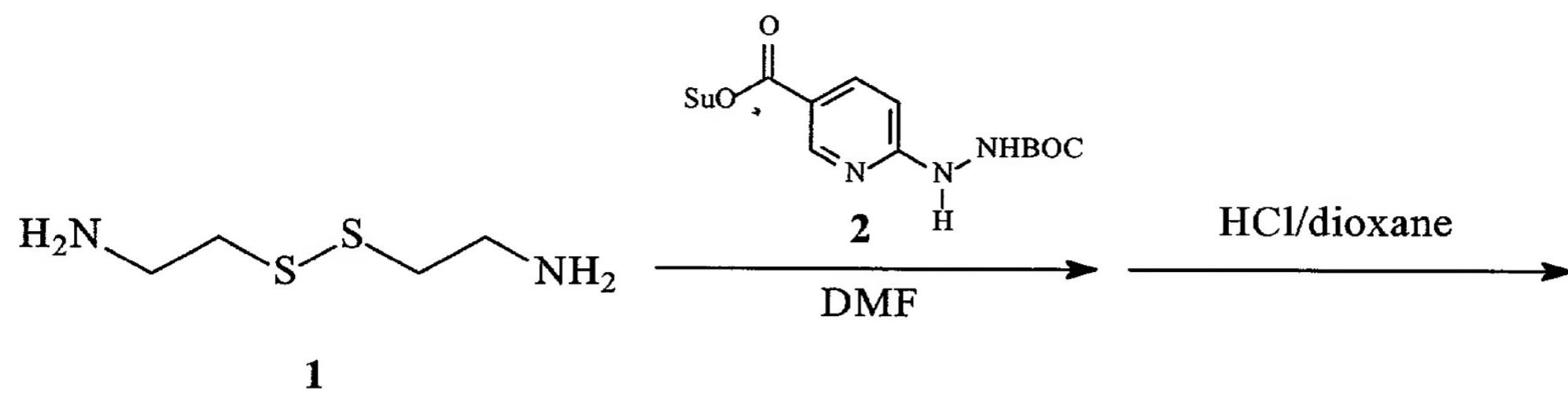


FIGURE 9